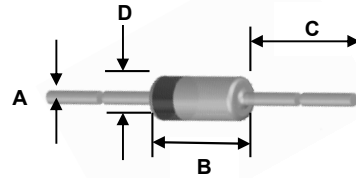


**Small Signal Diode**

**DO-35 Axial Lead**  
**HERMETICALLY SEALED GLASS**

**Features**

- ◇ Wide zener voltage range selection : 2.4V to 75V
- ◇  $V_z$  Tolerance Selection of  $\pm 2\%$
- ◇ Moisture sensitivity level 1
- ◇ Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ◇ Pb free version and RoHS compliant
- ◇ All External Surfaces are Corrosion Resistant and Leads are Readily Solderable
- ◇ ESD rating 15KV per human body model

**Mechanical Data**

- ◇ Case : DO-35 package (SOD-27)
- ◇ High temperature soldering guaranteed :  $260^\circ\text{C}/10\text{s}$
- ◇ Polarity : Indicated by cathode band
- ◇ Weight :  $109 \pm 4 \text{ mg}$

Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	0.45	0.55	0.018	0.022
B	3.05	5.08	0.120	0.200
C	25.40	38.10	1.000	1.500
D	1.53	2.28	0.060	0.090

**Ordering Information**

Part No.	Package	Packing
BZX55BXXX A0	DO-35	5Kpcs / Ammo
BZX55BXXX R0	DO-35	10Kpcs / 14" Reel

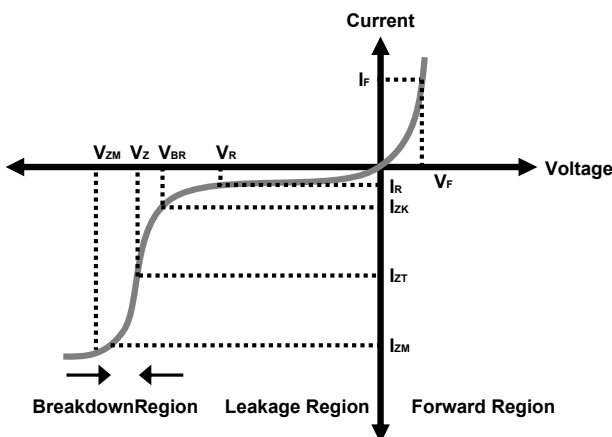
**Maximum Ratings and Electrical Characteristics**

Rating at  $25^\circ\text{C}$  ambient temperature unless otherwise specified.

**Maximum Ratings**

Type Number	Symbol	Value	Units
Power Dissipation	$P_D$	500	mW
Forward Voltage	$V_F$	1.0	V
Thermal Resistance (Junction to Ambient) (Note 1)	$R_{\theta JA}$	240	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-65 to + 200	$^\circ\text{C}$

Notes:1. Valid provided that electrodes are kept at ambient temperature, and mount on PC board 50mmx50mmx1.6mm

**Zener I vs. V Characteristics**


- $V_{BR}$  : Voltage at  $I_{ZK}$
- $I_{ZK}$  : Test current for voltage  $V_{BR}$
- $Z_{ZK}$  : Dynamic impedance at  $I_{ZK}$
- $I_{ZT}$  : Test current for voltage  $V_Z$
- $V_Z$  : Voltage at current  $I_{ZT}$
- $Z_{ZT}$  : Dynamic impedance at  $I_{ZT}$
- $I_{ZM}$  : Maximum steady state current
- $V_{ZM}$  : Voltage at  $I_{ZM}$

**Small Signal Diode**

**Electrical Characteristics**

Ta = 25°C unless otherwise noted

Vf Forward Voltage = 1.0V Maximum @ If = 10 mA for all part numbers

Part Number	Vz @ IzT (Volt)			IzT (mA)	ZzT @ IzT (Ω) Max	Izk (mA)	Zzk @ Izk (Ω) Max	Ir @ Vr (μA) Max	Vr (V)
	Nom	Min	Max						
BZX55B2V4	2.4	2.35	2.45	5.0	85	1.0	600	50	1.0
BZX55B2V7	2.7	2.65	2.75	5.0	85	1.0	600	10	1.0
BZX55B3V0	3.0	2.94	3.06	5.0	85	1.0	600	4.0	1.0
BZX55B3V3	3.3	3.23	3.37	5.0	85	1.0	600	2.0	1.0
BZX55B3V6	3.6	3.53	3.67	5.0	85	1.0	600	2.0	1.0
BZX55B3V9	3.9	3.82	3.98	5.0	85	1.0	600	2.0	1.0
BZX55B4V3	4.3	4.21	4.39	5.0	75	1.0	600	1.0	1.0
BZX55B4V7	4.7	4.61	4.79	5.0	60	1.0	600	0.5	1.0
BZX55B5V1	5.1	5.00	5.20	5.0	35	1.0	550	0.1	1.0
BZX55B5V6	5.6	5.49	5.71	5.0	25	1.0	450	0.1	1.0
BZX55B6V2	6.2	6.08	6.32	5.0	10	1.0	200	0.1	2.0
BZX55B6V8	6.8	6.66	6.94	5.0	8	1.0	150	0.1	3.0
BZX55B7V5	7.5	7.35	7.65	5.0	7	1.0	50	0.1	5.0
BZX55B8V2	8.2	8.04	8.36	5.0	7	1.0	50	0.1	6.2
BZX55B9V1	9.1	8.92	9.28	5.0	10	1.0	50	0.1	6.8
BZX55B10	10	9.80	10.20	5.0	15	1.0	70	0.1	7.5
BZX55B11	11	10.78	11.22	5.0	20	1.0	70	0.1	8.2
BZX55B12	12	11.76	12.24	5.0	20	1.0	90	0.1	9.1
BZX55B13	13	12.74	13.26	5.0	26	1.0	110	0.1	10
BZX55B15	15	14.70	15.30	5.0	30	1.0	110	0.1	11
BZX55B16	16	15.68	16.32	5.0	40	1.0	170	0.1	12
BZX55B18	18	17.64	18.36	5.0	50	1.0	170	0.1	14
BZX55B20	20	19.60	20.40	5.0	55	1.0	220	0.1	15
BZX55B22	22	21.56	22.44	5.0	55	1.0	220	0.1	17
BZX55B24	24	23.52	24.48	5.0	80	1.0	220	0.1	18
BZX55B27	27	26.46	27.54	5.0	80	1.0	220	0.1	20
BZX55B30	30	29.40	30.60	5.0	80	1.0	220	0.1	22
BZX55B33	33	32.34	33.66	5.0	80	1.0	220	0.1	24
BZX55B36	36	35.28	36.72	5.0	80	1.0	220	0.1	27
BZX55B39	39	38.22	39.78	2.5	90	0.5	500	0.1	28
BZX55B43	43	42.14	43.86	2.5	90	0.5	600	0.1	32
BZX55B47	47	46.06	47.94	2.5	110	0.5	700	0.1	35
BZX55B51	51	49.98	52.02	2.5	125	0.5	700	0.1	38
BZX55B56	56	54.88	57.12	2.5	135	0.5	1000	0.1	42
BZX55B62	62	60.76	63.24	2.5	150	0.5	1000	0.1	47
BZX55B68	68	66.64	69.36	2.5	160	0.5	1000	0.1	51
BZX55B75	75	73.50	76.50	2.5	170	0.5	1000	0.1	56

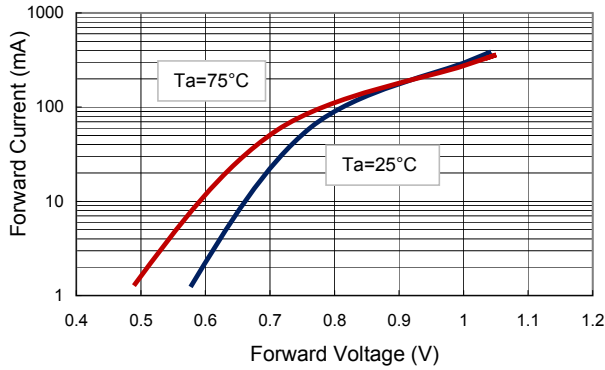
**Notes:**

1. The Zener Voltage (Vz) is tested under pulse condition of 10ms
2. The device numbers listed have a standard tolerance on the nominal zener voltage of ±2%.
3. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown an tighter voltage tolerances, contact your nearest **Taiwan semiconductor** representative.
4. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the DC zener current (IzT or Izk) is superimposed to IzT or Izk.

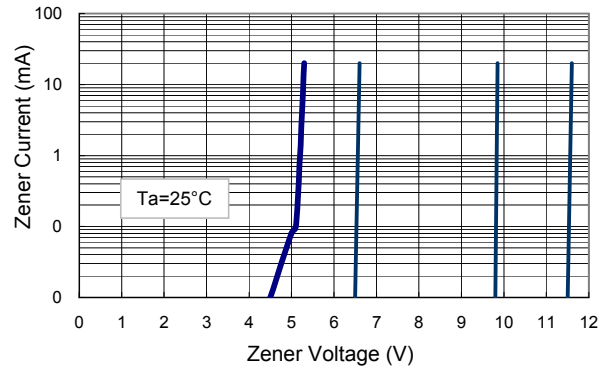
**Small Signal Diode**

**Rating and Sharacteristic Curves**

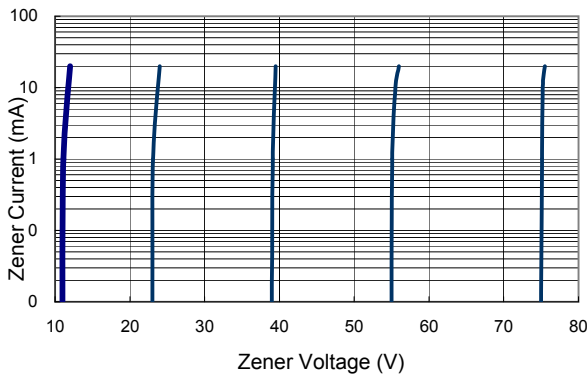
**FIG 1 Typical Forward Characteristics**



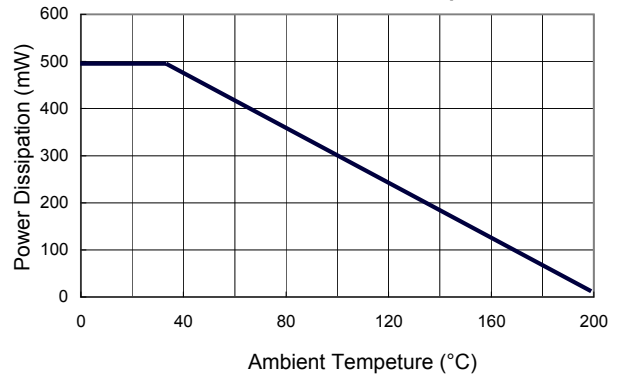
**FIG 2 Zener Breakdown Characteristics**



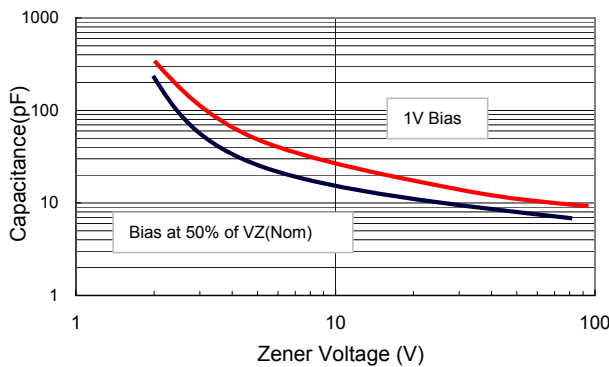
**FIG 3 Zener Breakdown Characteristics**



**FIG 4 Admissible Power Dissipation Curve**



**FIG 5 Typical Capacitance**



**FIG 6 Effect of Zener Voltage on Impedance**

